



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,834	12/04/2003	Ulrich Bonne	H0004834(1100.1205101)	7422
128	7590	08/09/2006	EXAMINER	
HONEYWELL INTERNATIONAL INC.			DOUGLAS, KATHERINE L	
101 COLUMBIA ROAD			ART UNIT	
P O BOX 2245			PAPER NUMBER	
MORRISTOWN, NJ 07962-2245			1743	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/727,834	Applicant(s) BONNE ET AL.	
	Examiner Katherine L. Douglas	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is ____ closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,38 and 40-50 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,38 and 40-50 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Remarks filed on 7 July 2006 have been acknowledged. Examiner withdraws finality. Claims 1, 3-12, 38, and 40-50 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1 and 3-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (USPN 4,973,561) in view of Kawabata et al. (USPN 5,691,205).

Hansen et al. teach a flow cell that allows a sample solution to be fed in, react with a medium, and for measurements to occur. This can be seen best in Figure 2. There is a permeable membrane 7 between the inlet and outlet of the flow cell. "Sample solution is led into the cell past a membrane 7 and out at 2. Reagent solution 10 is led in on the other side of the membrane and out of the cell, preferably via an opening 11 at the far end of the membrane, and further to the sample outlet 2" [column 2, lines 3-7]. Additionally, there is a light source 4, and a light detector 6 adjacent the flow cell.

Hansen et al. do not specifically teach that the light source and light detector are located at first and second ends of the enclosure, or that there is a processor connected to the light detector, or an indicator connected to the processor.

Kawabata et al., however, teach a flow cell that has the light source and detector on opposite ends of the flow cell. This is clearly seen in Figure 9. Kawabata et al. state that this light source can be a laser, which increases the sensitivity of the measurements. Additionally, "the fluorescence from the fluorescent dye is separated by a filter or a diffraction grating from the excitation light, and the fluorescence intensity is measured by a photodiode, photomultiplier, or a CCD camera" [column 6, lines 61-65].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the flow cell / sensor system of Hansen et al. to have the light source and detector at first and second ends of the enclosure for the purpose of more

accurate measurement. Additionally, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a processor connected to the light detector and an indicator connected to the processor for the purposes of being able to make measurements and see the results.

5. **Claims 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. in view of Kawabata et al. as applied to claims 1 and 3-6 above, and further in view of Brandon (GB 2 208 707 A).

Hansen et al. in view of Kawabata et al. do not teach the use of containers connected to the enclosure or a valve connected to the output of the enclosure.

Brandon teaches a flow cell gas analyzer. In this analyzer, the inlet of the cell is "connected to a source of fluid", and "a pulsed valve in an outlet connected to the flexible container" exists. [page 3]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize containers connected to the inlet and outlet of the flow cell for the purposes of storing reagents and waste. Additionally, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a valve at the outlet of the flow cell for the purposes of controlling the amount of time the sample and reagents are in the flow cell.

6. **Claims 10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. in view of Kawabata et al. in view of Brandon (GB 2 208 707 A) as applied to claims 7-9 above, and further in view of Chandler (USPN 6,592,822 B1).

Hansen et al. in view of Kawabata et al. in view of Brandon do not teach the use of a second light source near the enclosure.

Chandler discloses “the instant invention provides a multi-analyte diagnostic system for use with a computer. The diagnostic system, for example, includes a flow analyzer including, a substantially co-planar optical assembly having at least one light source and at least one optical detector” [column 7, lines 15-19]. He goes on to further describe the light sources, saying “the plurality of light sources, optionally, include two light sources. Each light source, optionally, emits respective two distinct wavelengths of light” [column 7, lines 49-51]. Therefore, considering the teachings of Hansen et al. in view of Kawabata et al. in view of Brandon, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the multiple light sources, using lasers of different wavelengths, as well as including a flow sensor for the purposes of expanding the range of possible analytes and, as indicated by Chandler, “it is desirable to minimize the testing time to increase the number of tests that can be performed over a predetermined time interval” [column 2, lines 64-67].

7. **Claims 38 and 40-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. in view of Kawabata et al. in view of Brandon in view of Chun et al. (USPN 6,727,099 B2).

The teachings of Hansen et al. in view of Kawabata et al. in view of Brandon are above. Hansen et al. in view of Kawabata et al. in view of Brandon do not specifically disclose a tubular permeable membrane enclosure, however, it is well known in the art that permeable membrane enclosures are often tubular in shape. Chun et al. disclose

an analyzer that, as seen in figure 1, is a tubular permeable membrane. It would have been obvious to modify the analyzer of Brandon to use a tubular permeable membrane for the purpose of making the device more cheaply, or using a specific geometry to make calculations simpler.

8. **Claims 47-50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. in view of Kawabata et al. in view of Brandon in view of Chun et al. as applied to claims 38 and 40-46 above, and further in view of Chandler.

Hansen et al. in view of Kawabata et al. in view of Brandon in view of Chun et al. do not specifically teach the use of a second light source or a flow sensor. The teachings of Chandler are above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the multiple light sources, using lasers of different wavelengths, as well as including a flow sensor for the purposes of expanding the range of possible analytes and, as indicated by Chandler, "it is desirable to minimize the testing time to increase the number of tests that can be performed over a predetermined time interval" [column 2, lines 64-67].

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-12, 38, and 40-50 have been considered but are moot in view of the new ground(s) of rejection.


The flow cell of Hansen et al. in view of Kawabata et al. teach the use of a flow cell in which the light source is adjacent a first end of the enclosure and the light detector is adjacent a second end of the enclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine L. Douglas whose telephone number is 571-272-1207. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kld


Jill Warden
Supervisory Patent Examiner
Technology Center 1700